

**DEPARTMENT OF TRANSPORTATION****DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch

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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:**Siegenthaler, Peter**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-018789**Date Inspected:** 02-Dec-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 1900**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 700**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** See Below**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** OBG**Summary of Items Observed:**

CWI Inspector: Mr. Li Shi You

On this date CALTRANS OSM Quality Assurance (QA) Inspector, Mr. Paul Dawson, arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai China, for the purpose of monitoring welding and fabrication of the San Francisco / Oakland Bay Bridge (SFOBB) components. This QA Inspector observed the following:

OBG Bay 14

This QA Inspector observed ZPMC welder Mr. Sun Lingling, stencil 048047 used shielded metal arc welding procedure WPS-B-P-2212-B-U2-FCM-1 to make OBG tack weld SEG3019\*005 between segment 14E deck plates. This QA Inspector observed Mr. Sun Lingling did not appear to have preheated the base materials prior to making a tack weld near the center of this weld joint. This QA Inspector observed the ambient steel temperature was less than 20 degrees Celsius. This QA Inspector observed that the minimum preheat for his weld joint is 40 degrees Celsius. This QA Inspector informed ZPMC QC Inspector Mr. Guo Wei and Mr. Zhong Guo Hui that no preheating of the base materials appears to have been used prior to tack welding. This QA Inspector asked Mr. Guo Wei who was the responsible Certified Welding Inspector (CWI) for this welding and he informed this QA Inspector the CWI for this location was Mr. Li Yan Hua. This QA Inspector asked QC Inspectors Mr. Guo Wei and Mr. Zhong Guo Hui to have the CWI come to this location in order to observe the lack of preheat. About fifteen minutes later ABF CWI Mr. Li Shi You arrived at the weld (instead of CWI Mr. Li Yan Hua) and Mr. Li Shi You said he was the CWI for the West lift 13 and 14 and he was not assigned to perform inspections on the

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## WELDING INSPECTION REPORT

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East lifts 13 and 14. Mr. Li Shi You spoke with Mr. Sun Lingling and he informed this QA inspector that only two tack welds were made without preheat. Mr. Li Shi You had the welds ground out and he marked these areas to be magnetic particle (MT) inspected at a later time. Mr. Li Shi You said there were no MT Inspectors available to perform the MT inspections this shift. See the photographs below for additional information.

This QA Inspector observed ZPMC welder Ms. Wang Min, stencil 044771 used submerged arc welding procedure specification WPS-B-T-2221-B-L2C-S-2 to make weld SEG3019\*-003. This weld joins OBG segment 14E deck plates. This QA Inspector observed a welding current of approximately 630 amps, 32.0 volts and Ms. Wang Min appeared to be certified to make this weld. This QA Inspector observed the base materials were preheated with electric heaters prior to welding. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Chen Chuanzong, stencil 044824 was waiting for the temperature of the base material adjacent to weld SEG3019AB-192 to attain the required preheat temperature prior to commencing welding of critical weld repair B-CWR-2232. ZPMC has installed electrical heating elements on the areas that are to be weld repaired. This weld is located in segment 14E. This QA Inspector observed the CWR document requires a lead Certified Welding Inspector (CWI) to monitor this critical weld repair. This QA Inspector informed ZPMC QC Inspector Mr. Zhong Guo Hui that ABF CWI Mr. Li Shi You had said he was monitoring welding in segment 13 and 14 west. This QA Inspector showed Mr. Zhong Guo Hui that the critical weld repair document requires a lead CWI to monitor this CWR in segment 14E. ZPMC QC Mr. Zhong Guo Hui informed this QA Inspector that ZPMC will not perform critical weld repair B-CWR-2232 this shift.

This QA Inspector observed ZPMC welder Mr. Yang Yunfeng, stencil 215553 used shielded metal arc welding procedure WPS-345-SMAW-3G(3F)-FCM-Repair to make a weld repair of ultrasonic rejections to OBG segment 13AE weld SEG3007C-170. ZPMC QC Mr. Zhong Guo Hui presented this QA Inspector with weld repair document B-WR-17559 that documents the repair of this weld. This QA Inspector observed ZPMC QC has recorded a welding current of 148 amps. This QA Inspector observed Mr. Yang Yunfeng appeared to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Wang Zhengbin, stencil 216086 used shielded metal arc welding procedure WPS-345-SMAW-3G(3F)-FCM-Repair to make a weld repair of ultrasonic rejections to OBG segment 13AE weld SEG3007B-125. ZPMC QC Mr. Zhong Guo Hui presented this QA Inspector with weld repair document B-WR-17558 that documents the repair of this weld. This QA Inspector observed a welding current of approximately 157 amps. This QA Inspector observed Mr. Wang Zhengbin appeared to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Dan Deyin, stencil 044795 used flux cored welding procedure specification WPS-B-T-2233-ESAB to make OBG segment 13AE weld SEG3007F-036. This QA Inspector observed ZPMC QC Inspector ZPMC QC Mr. Zhong Guo Hui has recorded a welding current of 292 amps and 24.8 volts. Mr. Dan Deyin appeared to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder stencil 052646 used flux cored welding procedure specification WPS-B-T-2233-ESAB to make OBG segment 13AE weld SEG3007AD-024. This QA Inspector observed ZPMC

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ZPMC did not preheat the base material prior to making tack welds in SEG3019\*-005.

12-02-2010 19:39



美国钢桥焊接过程检查记录卡		The welding process inspection card	
The part name		The section name	
焊接位置 The weld position	36-40 SD	钢板厚度 The thickness of plate	1/2"
焊接时间 The welding time	2:00	钢板编号 The weld position	516 (W) A-XXX
电流 Electric current	293	电压 Voltage	25.1
电压 Voltage	25.1	速度 Welding speed	27.2
速度 Welding speed	27.2	环境温度 Source temperature	60
焊接形式 Welding type	34 + 49	执行WPS编号 WPS No.	WPS-47
焊接方法 Welding method	Don't + 514	焊工 Welder	2010-20-31

See Above.

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact James Devey +8615000026784, who represents the Office of Structural Materials for your project.

Quality Assurance Inspector  
QA Reviewer